

# PRC vs The Cathedral

## How PRC Might Change Publishing

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# INTRODUCTION



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## Foreword

This account is a personal reflection, drawn from my experiences working with a variety of inspiring PRC and preprint projects, including arXiv, NCRC, Biophysics Colab, MetaROR, COAR, eLife, the Bat Pathogen Spillover Evidence Compendium, the LifeCycle Journal and others. It also builds on countless conversations and working sessions with practitioners across the scholarly communication ecosystem. Each of these interactions has offered unique insights into the challenges and possibilities of PRC, and I've learned a great deal from the people and communities driving this work.

What follows is not a definitive account but an attempt to capture some of the ideas and perspectives I've encountered along the way. I'm grateful for the opportunity to share these reflections and to be part of a community committed to reimagining how research is shared and valued.

I've included some endnotes in most chapters, but since this is a short book, I've opted to list many of the projects mentioned at the back to avoid the endnotes overshadowing the chapters. Additionally, in the spirit of PRC, this book is a early release, but also a living and evolving work. You're welcome to contribute—drop me a line, and I'll gladly add you as a collaborator to help improve it, or just email me your comments.

With thanks to Paul Shannon, Michael Markie, Daniella Lowenberg, and Ludo Waltman for their feedback and corrections.

This is Version 1, currently available in PDF format only. Following further feedback and contributions (as outlined above), future versions (v1.x and beyond) will be available in EPUB, web, PDF, and print formats. If anyone would like to make a cover please do!

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## Decentralizing Academic Publishing

For those deeply engaged in the evolving landscape of scholarly communication—whether as publishers, researchers, librarians, or technology providers—the Publish-Review-Curate (PRC) model represents more than just a procedural adjustment. It signals a profound shift in how knowledge is disseminated, reviewed, and curated. This shift challenges long-standing norms, disrupts entrenched workflows, and offers a compelling opportunity to rethink the entire ecosystem of scholarly publishing. To grasp the full potential and implications of PRC, it is insightful to draw on frameworks from other fields that have successfully navigated transformative change. One such framework is Eric S. Raymond's seminal essay, *The Cathedral and the Bazaar* [1]. By contrasting two fundamentally different approaches to creating and managing systems—centralized, hierarchical control versus decentralized, community-driven collaboration—Raymond provides a lens through which we can critically examine PRC's transformative promise and its potential to redefine the future of scholarly communication.

In Raymond's analysis, the *Cathedral* represents a traditional, hierarchical model of production. Here, processes are centralized, tightly controlled, and methodically planned. Progress flows from the top down, resulting in polished outputs but often struggling with rigidity, inefficiency, and an inability to adapt swiftly to new demands. By contrast, the *Bazaar* is a decentralized, user-driven model that thrives on openness, collaboration, and dynamism. Solutions in the Bazaar emerge organically through contributions from a diverse and engaged community. This iterative and participatory approach prioritizes transparency and flexibility, creating systems that evolve fluidly and respond effectively to real-time challenges.

Raymond illustrates these concepts with examples from open-source software development. The *Cathedral* reflects many proprietary models like those of traditional software companies, while the *Bazaar* mirrors the open, community-driven ethos of projects like Linux. By embracing decentralization and iterative improvement, the Bazaar has outperformed the Cathedral [2], addressing inefficiencies and solving many problems more effectively.

The parallels between these two models and scholarly publishing are striking. Traditional scholarly publishing embodies the Cathedral: slow-moving, top-down, and reliant on centralized gatekeeping. Manuscripts pass through tightly controlled workflows involving editorial teams, reviewers, and production staff, with decisions concentrated in the hands of a few. While this ensures quality control, it often leaves researchers and other contributors frustrated by inefficiencies, high costs, and significant delays in disseminating knowledge.

Emerging PRC workflows, by contrast, reflect the principles of the Bazaar. The PRC model flips the traditional order, starting with the immediate dissemination of research (publication) before peer review and community curation take place [3].

This reorientation enables faster, more inclusive, and iterative communication while reducing bottlenecks in the publishing process. Like the Bazaar, PRC relies on openness

and collaboration, allowing researchers and the community to play active roles in validating and refining the scholarly record.

Understanding PRC requires more than just examining its mechanics—it involves recognizing the broader cultural and operational shift it represents. The success of the open-source movement, which rose from an idealistic vision to become the dominant model for software development, offers valuable lessons. Open source demonstrated how transparency, collaboration, and decentralization could challenge entrenched hierarchies, fostering greater speed, innovation, and efficiency. PRC shares this ethos, presenting a similar opportunity to reimagine scholarly communication as a dynamic, participatory ecosystem.

This book uses the ideas presented in *The Cathedral and the Bazaar* as a touchstone for exploring PRC and its relevance to scholarly communication. By reflecting on the systemic inefficiencies of Cathedral-like models and the possibilities offered by Bazaar-like alternatives, this book aims to provide insight into how PRC could reshape the future of scholarly publishing and why it matters to all of us working within this evolving ecosystem.

## Endnotes

1. **Eric S. Raymond's Essay:** Raymond's full essay, *The Cathedral and the Bazaar* (1992), can be accessed at: <http://www.catb.org/esr/writings/cathedral-bazaar/>.
2. **Statcounter.** Statcounter lists Android (based on Linux) as the most popular operating system across all platforms today. It's one metric, amongst many, but an important one. <https://gs.statcounter.com/os-market-share#monthly-202412-202412-bar>
3. **Understanding the Publish-Review-Curate (PRC) Model of Scholarly Communication.** Corker, K. S., Waltman, L., & Coates, J. (2024). This article introduces the PRC model with useful definitions including this useful framing: "Under the PRC model publishing occurs first, prior to review and curation, and the model supports decentralized implementations in which the publish, review, and curate stages are implemented by different services.". Retrieved from <https://osf.io/preprints/metaarxiv/h7swt>.



2

PUBLISHING NOW



3

## The High Cost of Slow Journals

Journal publishing is a complex and labor-intensive endeavor, requiring careful coordination across multiple stages. At its core, the process involves managing submissions, coordinating peer review, and converting manuscripts into publishable formats [1]. Completing these steps before publication demands significant resources and effort, and there are many challenges.

While journals have been widely debated in terms of access, ethics, and fairness, this chapter sets those broader discussions aside for now to focus on two specific operational challenges that drive inefficiencies in both time and cost. These core bottlenecks lie at the heart of the complexity and expense of the journal publishing process.

**The first challenge lies in managing the peer review process**, a cornerstone of academic publishing but one of its most resource-intensive elements. Once a manuscript is submitted—a labor-intensive process in itself for authors—the laborious task of finding reviewers begins. Editors must identify experts in the relevant field, many of whom are in high demand and often unavailable. Invitations frequently go unanswered, requiring multiple rounds of outreach and follow-ups. Even when reviewers agree, deadlines are commonly missed, necessitating further reminders and administrative effort. If revisions are required, the process is repeated—sometimes with different reviewers—further compounding delays. Adding to this complexity are specialized technical checks, such as ensuring compliance with various technical and cultural standards, verifying statistical analyses, or evaluating charts, images, data etc. These steps require substantial time, oversight, and coordination, making peer review one of the most resource-intensive and costly stages of the journal publishing workflow.

**The second challenge is production**, where manuscripts are transformed into their final publishable formats. Most journals start with submissions in formats like DOCX (Microsoft Word), often accompanied by supplemental materials in other formats. These files must undergo a meticulous process of formatting, typesetting, and conversion into multiple outputs, including XML [2] (usually but not exclusively JATS [3]), PDF, and HTML. Metadata extraction and preparation for systems like CrossRef [4] further add to the workload, ensuring the article is properly registered and integrated into the scholarly record. Production can be handled internally, requiring skilled staff and substantial resources, or outsourced to vendors, which may reduce internal workload but incurs significant financial costs. Regardless of the approach, production also remains a costly and time-intensive endeavor.

These operational inefficiencies present a substantial burden for journals. In traditional subscription-based models, costs are typically covered by institutional subscription fees, while in open-access environments, they are often passed on to authors or their funders through Article Processing Charges (APCs).

Ultimately, the delays and costs inherent in these processes ripple across the publishing ecosystem, affecting authors, institutions, and readers alike. The current paradigm—rooted in labor-intensive reviewer management and costly production workflows—creates inefficiencies that hinder the timely dissemination of knowledge



and increase its costs. Addressing these core operational issues is critical for developing more efficient and sustainable publishing model.

## Endnotes

1. **Biomedical publishing: Past historic, present continuous, future conditional.** Richard Sever (2023). This article by bioArxiv co-founder Richard Sever has a useful high level summary on what journals do in the 'Present Continuous' section. <https://journals.plos.org/plosbiology/article?id=10.1371/journal.pbio.3002234#sec007>
2. **XML (Extensible Markup Language):** XML is a flexible, text-based format designed to store and transport structured data. XML can be complex and requires technical expertise to implement effectively. For more information, see: <https://www.w3.org/XML/>.
3. **JATS (Journal Article Tag Suite):** JATS is an XML-based standard specifically designed and used for structuring and tagging journal content. For more information, see the National Center for Biotechnology Information (NCBI) documentation: <https://jats.nlm.nih.gov/>.
4. **CrossRef:** CrossRef is a non-profit organization that, amongst other functions, provides Digital Object Identifiers (DOIs) for scholarly content. For more information, visit: <https://www.crossref.org/>.



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Preprints: Solving for Time

Preprints emerged as a direct response to the inefficiencies of journal publishing, particularly in reviewer management and production workflows, which can delay formal publication by months or even years. By allowing researchers to share their work immediately, preprints address the "time-to-market" challenge and bypass the protracted timelines of traditional publishing.

The modern preprint era began in 1991 with the creation of arXiv [1], which initially served the physics community. At a time when academic publishing was dominated by slow, tightly controlled processes, arXiv offered researchers a revolutionary platform to rapidly and openly share their findings. By enabling immediate dissemination, arXiv presented a practical solution to the delays inherent in traditional journals.

The arXiv model emphasized speed and openness, ensuring that researchers could quickly communicate their findings. As arXiv grew and submission volumes increased, automated checks were introduced to manage scaling challenges. By embracing this model, arXiv set a standard for other preprint platforms across disciplines, inspiring a new era in scholarly communication that prioritizes openness and rapid dissemination.

arXiv's success also lay in its careful positioning within the academic ecosystem, presenting itself as a complement rather than a competitor to journals. By using terms like "deposit" instead of "submit," "distribute" rather than "publish," "preprint" instead of "article," and "server" instead of "publisher." These terms signaled that the preprint process was no challenge to the journal system, presenting itself merely as a mechanical process akin to hosting files on an FTP server—"not really publishing."

The aesthetics of arXiv further reinforce this strategy. Its minimalist design and low-fi, DIY appearance suggest a utilitarian mechanism rather than a polished publishing platform, subtly underscoring its role as a simple, non-threatening tool. The PDFs 'distributed' by arXiv and other preprint servers also share this low-fi aesthetic, reinforcing their "early version" status and indicating by design the journal system's position as the arbiter of the final, authoritative "version of record." This approach helps sustain the perception that preprints are works in progress rather than finalized scholarly outputs. Interestingly, some preprint servers, like those that convert PDFs into XML for enriched presentation, could easily generate more polished and professional-looking PDFs, and they can all surely afford good web designers. However, they deliberately choose to maintain a simpler presentation.

This "aesthetics of utility" approach parallels another well-known "cathedral versus bazaar" project: Wikipedia. Wikipedia also prioritized utility over the aesthetics of authority, dismantling the dominant cathedral of its time—Encyclopedia Britannica (amongst others)—while ultimately winning the authority debate. Though it took time, Wikipedia's user-driven and collaborative model not only challenged traditional gatekeepers but also reshaped perceptions of credibility and trust, demonstrating how grassroots, community-driven initiatives that may appear 'low-fi' can redefine both form and function within entrenched systems.

Some platforms, however, are enhancing the utility and aesthetics of preprints. For example, bioRxiv integrates tools like Hypothesis [2] for public annotations and enables authors to request reviews from peer-review communities through the new COAR Notify [3] protocol. Meanwhile, platforms like eLife take preprint design further by transforming them into polished, professional outputs [4]. By reformatting preprints into visually enriched articles, eLife demonstrates how preprints can rival or even surpass traditional journal articles in functionality and aesthetics, enhancing their credibility and challenging conventional norms.

Despite its modest presentation, arXiv has had a profound impact, processing around 1,000 preprints per weekday [5] and becoming a central hub for scholarly publishing. Its model inspired platforms like bioRxiv and medRxiv, which adapted the preprint concept to fields like biology and medicine. Initially met with skepticism in disciplines where preliminary findings could have high stakes, these platforms gained acceptance over time, particularly during the COVID-19 pandemic, when they demonstrated their value in rapidly disseminating critical research.

While preprints have successfully addressed the "time-to-market" issue, they have not fully resolved the cost and review challenges of traditional publishing. Production costs vary significantly across platforms. For instance, ChemRxiv publishes author-submitted PDFs directly, keeping costs low, while bioRxiv invests in converting submissions into XML and HTML formats, incurring substantial expenses. Similarly, preprints deliberately sidestep the inefficiencies of peer review rather than solving them. By leaving formal review to journals, preprints maintain a complementary role and avoid direct competition. This strategy has allowed preprints to flourish, but it underscores their limitations: while they excel in dissemination, they largely depend on journals for content validation.

Some in the preprint ecosystem see room to move further into the realm of journal functions. Richard Sever, co-founder of bioRxiv, pushes on the established boundaries of preprints by envisioning a complementary system where preprints serve as a central hub for scholarly communication [6]. In this model, preprint servers act as the foundation, with journals and other initiatives feeding from the same well (preprint servers) rather than competing against them. In his writings, Sever advocates for a decentralized and adaptive publishing ecosystem that fosters collaboration and innovation. However, even in this vision, his argument is not for preprints to replace journals but to complement them.

Preprints were born out of researchers' frustration with the slow pace of traditional publishing. Eric Raymond's insights in *The Cathedral and the Bazaar* offer a useful parallel: "Every good work of software starts by scratching a developer's personal itch." Just as open-source software emerged to solve specific developer needs, preprints were created to meet researchers' immediate demand for speed. In doing so, they also solved a systemic problem for the wider academic community, demonstrating how individual frustrations can drive collective progress.

Platforms like arXiv, bioRxiv, and medRxiv have transformed scholarly communication, enabling immediate dissemination and fostering global collaboration. Yet, while preprints have significantly improved the speed of publishing, they leave the challenges of production costs and peer review inefficiencies largely untouched. Their success lies in addressing a critical need, but their limitations highlight the ongoing demand for innovation in scholarly communication.

## Endnotes

1. **Lessons from arXiv's 30 years of information sharing:** Paul Ginsberg (2021). This article is a introduction to the history of arXiv: [https://pmc.ncbi.nlm.nih.gov/articles/PMC8335983/pdf/42254\\_2021\\_Article\\_360.pdf](https://pmc.ncbi.nlm.nih.gov/articles/PMC8335983/pdf/42254_2021_Article_360.pdf).
2. **Hypothesis:** Hypothesis is an open-source tool for collaborative annotation. For more information, see: <https://web.hypothes.is/>.
3. **COAR Notify:** COAR Notify is an open protocol for facilitating decentralized and interoperable scholarly communication. Learn more at: <https://coar-notify.net/>
4. **eLife Reviewed Preprints:** eLife integrates expert reviews into preprints, presenting them as professionally formatted, visually enriched articles. Visit: <https://elifesciences.org/reviewed-preprints>.
5. **arXiv Stats:** Live data on monthly arXiv submissions can be found here: [https://arxiv.org/stats/monthly\\_submissions](https://arxiv.org/stats/monthly_submissions)
6. **Biomedical publishing: Past historic, present continuous, future conditional:** Richard Sever (2023). "A new, open ecosystem involving preprint servers, journals, independent content-vetting initiatives, and curation services could provide more multidimensional signals for papers and avoid the current conflation of trust, quality, and impact." <https://journals.plos.org/plosbiology/article?id=10.1371/journal.pbio.3002234#sec007>

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## PRC: Solving for Quality

PRC redefines quality assurance by transitioning from traditional pre-publication peer review (journals) to dynamic post-publication evaluation. Research is quickly disseminated as preprints on platforms like arXiv, bioRxiv, and medRxiv, making it immediately accessible to the scholarly community. PRC communities then engage with this content, conducting reviews and publishing evaluations. These reviews add valuable context, guiding researchers in forming informed opinions and enriching the ecosystem of scholarly communication. Reviews are often published on PRC community sites, third-party platforms like Sciety, or linked directly from preprint servers like bioRxiv.

Rather than a rigidly defined system, PRC represents a culture of practice, largely driven by researchers addressing their own needs. Researchers engage with and contribute to PRC to identify significant preprints and to organically develop practices tailored to the needs of their specific research communities.

This adaptability has led to diverse practices across PRC communities. Some groups like MetaROR require authors to submit preprints for review, while others (NCRC, Bat-com) review preprints independently of author involvement. Still others, like BioPhysics Colab proactively select preprints for review and then invite authors to participate. This flexibility underscores PRC's ability to accommodate a range of workflows and objectives.

Several platforms exemplify the dynamic and inclusive nature of PRC. PREview fosters collaborative and constructive feedback on preprints, emphasizing support for early-career researchers. Review Commons provides journal-independent peer reviews that authors can submit to multiple outlets, streamlining the submission process. F1000 Research integrates immediate publishing with open peer review and post-publication transparency, offering a self-contained workflow for iterative research evaluation. Peer Community In (PCI) takes a community-driven approach, organizing peer reviews around disciplinary groups and offering journal-independent recommendations for preprints.

Together, these initiatives illustrate how decentralized, open platforms empower researchers to reshape the peer review landscape. However, despite this diversity, the peer review process often mirrors traditional journal practices once it begins. Standard workflows—reviewer invitations, structured feedback, and editorial oversight—remain prevalent. This duality highlights the tension between embracing innovation and adhering to established norms.

PRC communities, often self-directed, thrive on grassroots participation. Researchers voluntarily contribute, driven by a shared commitment to improving research dissemination and evaluation. This bottom-up approach fosters a sense of ownership and agency, though it also presents challenges. Many researchers lack familiarity with the operational complexities of traditional journals, leading to an unintentional replication of journal-like workflows. Moreover, the technical infrastructure needed to integrate PRC outputs into the scholarly record can be daunting. Systems like DataCite [1], CrossRef, and metadata standards ensure research is



indexed and discoverable but often overwhelm volunteer-driven PRC groups. Tasks like converting plain-text citations into structured metadata or generating XML in JATS format amplify these difficulties.

Despite these challenges, PRC communities continue to innovate. Efforts to lower technical barriers are gaining traction, with emerging tools simplifying metadata management and integration. As researchers develop the expertise to navigate complex systems, their adaptability underscores PRC's resilience and potential for growth.

However, there is notable innovation in the review model within PRC, particularly when it comes to transparency and accountability in the review process. Many include reviewer names to foster openness and invite authors to respond to evaluations. Some PRC projects go further by registering reviews with DOIs [2], formally integrating them into the scholarly record. These practices enhance the visibility of peer evaluation and elevate its significance in scholarly communication.

Additionally, communities like Biophysics Colab, NCRC, and Bat-Com leverage AI-enhanced processes to batch-ingest domain specific preprint metadata for triage and review, enabling scalable and agile workflows distinct from traditional journal systems.

Some PRC communities are also experimenting with new metrics and workflows to evaluate preprints, challenging traditional methods of assessing research impact and quality.

These experimental approaches mirror the iterative processes of open-source development, where multiple solutions evolve to tackle specific challenges. This grassroots innovation and problem-solving approach also reflects the "itch-to-scratch" method common in open-source culture. In open-source development, developers identify a problem they face and design a solution, making the user and the architect one and the same. This user-designed methodology ensures that the tools and processes are directly aligned with the needs of those who use them.

Similarly, in PRC, many grassroots projects exemplify this model. Initiatives like MetaROR, Unjournal, NCRC, Bat-Com, Biophysics Colab, and Rapid Reviews: COVID-19 are researcher-driven groups designing and implementing new processes to solve problems *they* face. These groups are not just participants in the system—they are its architects, creating workflows, metrics, and tools that meet their specific needs.

PRC is not a singular solution but a collection of approaches shaped by its communities. By emphasizing rapid dissemination, adaptable evaluation, and collaborative practices, PRC redefines scholarly publishing. It complements existing systems, addresses the quality assurance gap left by preprints, and challenges entrenched norms, working towards a more inclusive and dynamic future for scholarly communication.

## Endnotes

1. **DataCite:** A non-profit organization providing, amongst other functions, DOIs for research data. Learn more at <https://datacite.org/>

2. **DOIs:** Persistent, unique identifiers for digital objects like articles and datasets. Managed by organizations like CrossRef and DataCite. Visit <https://www.doi.org/>

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PR... 'C'?

The "curate" in Publish-Review-Curate (PRC) warrants a closer examination, as it represents a critical yet often misunderstood component of the model. While curation is frequently framed as a distinct phase occurring after publication and review, this perspective oversimplifies its role. In reality, curation is a pervasive and distributed process embedded throughout the entire workflow, influencing every stage of scholarly communication. This is as true for journals as it is for PRC.

In traditional journal publishing, curation begins the moment an article is submitted. Editors assess whether a manuscript aligns with the journal's scope, while reviewers evaluate its quality and relevance. These early decisions are acts of curation that shape the scholarly record and determine what research is presented to the academic community. Post-publication, journals continue to curate by organizing articles into thematic issues, highlighting significant findings, and crafting editorial commentary to contextualize the work for readers.

Similarly, curation in PRC is inherently iterative and distributed. The selection of a preprint for review, for instance, is a curatorial act that signals its potential importance to the scholarly community. Reviews themselves serve as curatorial artifacts, offering interpretation, critique, and context that help researchers navigate the ever-expanding body of academic outputs. Curation permeates every layer of the PRC process.

One of PRC's defining features, however, is the flexibility it offers in how and, importantly, *where* curation occurs. Unlike traditional models, which centralize curation within the editorial structures of journals, PRC allows for a more distributed approach. Platforms like Sciety exemplify active curation by aggregating reviews and evaluations from diverse communities, creating centralized hubs where significant preprints and their assessments can be easily discovered.

However, the emphasis on curation introduces potential challenges. Decentralized curation may lead to inconsistencies, making the system harder to trust or navigate. Conversely, overly structured approaches risk replicating the gatekeeping practices PRC seeks to avoid. To strike the right balance, platforms and communities must work together to design systems that are inclusive and coherent, enabling diverse contributions while maintaining accessibility and clarity.

While curation is vital, the revolutionary aspect of PRC lies in its reimagining of the sequence between publication and review. In this light, it's worth reconsidering the prominence of "curate" in the PRC acronym. While curation is integral, PRC's transformative power ultimately lies in how it redefines the relationship between research dissemination and evaluation, with curation emerging in many forms as a necessary outcome of this shift.

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'Just' Process?

PRC might initially appear to be all about process. On the surface, Publish-Review-Curate is often described as a simple reordering of the traditional publishing workflow. But that perspective misses the deeper, more transformative dimension. Many PRC advocates I've spoken with aren't merely focused on refining processes—they are driven by a deep dissatisfaction with the conventions of journals. These advocates are pushing back against entrenched systems, taking matters into their own hands, and striving to reimagine not just how publishing is done but what it could and should become.

The emergence of PRC communities around preprint servers is no coincidence. Preprints were the first to “break the walls” of the cathedral, paving the way for a decentralized bazaar of scholarly communication. This decentralization extends beyond merely redistributing control—it creates a system where new groups can emerge and experiment with review and curation without seeking permission. This freedom nurtures a dynamic and adaptive ecosystem, where participation and innovation are accessible to all, planting the seeds for profound transformation.

The COVID-19 pandemic marked a turning point in the evolution of PRC, highlighting its potential to address real-world challenges and catalyzing its growth. As the global crisis unfolded, the urgency for rapid dissemination of research became undeniable. Traditional journals, hindered by slow review processes, struggled to meet the moment, while a deluge of preprints emerged as researchers raced to share findings relevant to the pandemic.

PRC communities stepped up to meet this challenge, demonstrating their principles of speed, adaptability, and decentralization. Initiatives like the Novel Coronavirus Research Compendium (NCRC) and *Rapid Reviews: COVID-19* facilitated swift and transparent evaluations of pandemic-related preprints, helping to ensure critical research reached decision-makers and the public in record time. These processes became the norm in this moment, offering a flexible and timely model for how the scholarly community could respond to urgent needs. The pandemic didn't just expose the limitations of traditional models—it underscored PRC's strengths and accelerated its evolution.

What began as a pragmatic response to systemic inefficiencies evolved into a broader vision for reimagining academic publishing. For many, the crisis underscored the need for innovation outside the constraints of traditional structures and fueled the momentum that continues to drive PRC forward today.

PRC practitioners have since built on this momentum, incorporating critiques of traditional journals while striving for a fundamentally different scholarly ecosystem. The Unjournal serves as a striking example of this ethos, explicitly rejecting the traditional journal model. Its co-manager, David Reinstein, summed up the issue succinctly: “Academic publishers extract rents and discourage progress.” [1]

MetaROR provides another compelling example of how PRC communities are challenging the journal model. It critiques traditional scholarly publishing for being too slow, opaque, and inefficient, with decision-making power concentrated in the hands of

a small group of editors and reviewers [2]. These systemic flaws hinder progress and limit diversity in the evaluation of research. MetaROR's approach emphasizes rapid dissemination, transparency, and community-driven evaluation, aligning with PRC's broader vision of decentralization and inclusivity.

While some PRC advocates, like those behind the Unjournal and MetaROR, take a more transformative approach to rethinking traditional journal practices, others focus on addressing specific limitations without seeking to replace the system entirely. This range of perspectives reflects the diversity within the PRC movement, highlighting its flexibility and capacity to meet a variety of 'itches' across the scholarly communication ecosystem.

Today, PRC is not just about refining workflows or improving efficiency. It represents a call to challenge entrenched power structures and build a system rooted in the values and needs of the scholarly community. At its heart, PRC embodies the ethos of a movement, not just a method.

The parallels with open source are compelling. Open source wasn't just about software licenses; it was about enabling decentralized collaboration. It emerged as a response to the limitations of proprietary software, establishing a bazaar to challenge the cathedral. It was a direct critique of centralization and a push toward a system that valued collaboration, innovation, and shared ownership. Similarly, PRC is not merely a procedural reordering; it is an attack on centralization itself. It seeks to establish a scholarly bazaar—an open, decentralized ecosystem where innovation flourishes, traditional hierarchies are dismantled, and the community takes control of its own narrative and processes.

## Endnotes

1. **The Unjournal and Academic Publishing Rents:** The Unjournal critiques traditional academic publishing models as highlighted by its founder, David Reinstein. Reinstein emphasizes the need for alternative frameworks that address these inefficiencies and promote innovation. For more about The Unjournal and its mission, see: <https://www.davidreinstein.org/projects/unjournal/>.
2. **MetaROR's Mission:** MetaROR aims to transform scholarly publishing by addressing inefficiencies, promoting transparency, and decentralizing decision-making. It seeks to create more equitable systems for evaluating and disseminating research. For more information on MetaROR's vision and initiatives, visit: <https://metaror.org/about-metaror/>





8

## PRC vs Preprint Servers

Preprint servers provide the essential infrastructure for rapid dissemination, allowing researchers to bypass the delays of traditional publishing. PRC platforms rely heavily on this foundation, building on these repositories by adding layers of evaluation, validation, and curation that enhance the value of preprints and provide critical context for the research community. This evolving relationship highlights a largely one-sided interdependency: while preprint servers fulfill their primary function of hosting and sharing research independently of PRC workflows, many PRC platforms would struggle to operate without the foundation preprint servers provide.

This dynamic raises important questions about the future of these systems. An important question that arises is whether PRC platforms could evolve to accept direct submissions or deposits, thereby enhancing their independence from preprint servers?

Interestingly, PRC platforms are evolving beyond simply adding reviews to preprints, with some of their functions overlapping or even duplicating those of preprint servers. Many now, for example, reformat and republish preprints in enriched HTML formats, departing from static PDFs [1]. This shift is enabled by the close-knit nature of PRC communities, where researchers driving the platform and those submitting preprints often belong to the same peer groups. This proximity facilitates the direct sharing of original DOCX files, making it easier to convert preprints into interactive and feature-rich presentations. These enriched formats enhance usability, accessibility, and aesthetics, fostering deeper engagement with the content. By offering such features, PRC platforms are positioning themselves as key *direct* access points for scholarly communication, sometimes bypassing the need to return to the original preprint servers. This is particularly beneficial for review communities that engage with content from multiple disparate preprint repositories.

By deliberately maintaining a utilitarian aesthetic that avoids challenging the polished appearance of journals, preprint servers have also perhaps unintentionally created an opportunity for PRC platforms to go further. By producing enriched HTML and PDF versions of preprints, PRC platforms are beginning to challenge the 'aesthetic authority' of journals. Design matters—it shapes perceptions of quality, credibility, and authority. By presenting research in visually appealing and accessible formats, PRC platforms not only enhance user engagement but also subtly shift the perception of preprints from 'early drafts' to polished, authoritative scholarly outputs.

In the process of reviewing preprints, PRC platforms are also increasingly engaging with the technical infrastructure of the scholarly record, such as DOIs, persistent identifiers (PIDs) [2], and metadata standards. By incorporating these elements into their workflows, PRC platforms ensure their outputs are seamlessly integrated into the broader academic ecosystem. This convergence of technical and academic expertise allows PRC communities to play a pivotal role in managing and enriching the scholarly record.

As PRC platforms expand, opportunities for deeper collaboration with preprint servers emerge, but they also present strategic challenges. Preprint servers must weigh

whether integrating more deeply with PRC workflows enhances their role in scholarly communication or risks straining their delicate relationship with traditional journals. While closer alignment could enhance their value proposition, it might also increase their threat profile, potentially leading journals to view preprints as competitors rather than complementary infrastructure.

PRC platforms, meanwhile, have the capacity to bypass preprint servers entirely. By hosting content themselves, PRC initiatives could consolidate dissemination, review, and curation within a single workflow, achieving greater independence. This possibility adds complexity to the relationship, suggesting that PRC platforms could operate autonomously, challenging the established ecosystem of preprint servers.

In this emergent landscape, preprint servers and PRC platforms have the opportunity to redefine scholarly communication. If they can navigate the balance between collaboration and independence, they could create a more inclusive, transparent, and adaptive system—one that facilitates the rapid dissemination of research while ensuring rigorous evaluation and curation. The direction this ecosystem takes will depend on how these systems evolve and respond to the opportunities and tensions inherent in their interconnected roles.

## Endnotes

1. **Enriched HTML Preprints:** PRC platforms are advancing beyond static PDFs by reformatting and republishing preprints in enriched HTML formats, providing more interactive and accessible presentation of research. For an example of this approach, see: <https://metaror.org/kotahi/articles/14/index.html>.
2. **Persistent Identifiers (PIDs):** Persistent Identifiers are unique, long-lasting references used to identify digital objects such as research articles, datasets, and researchers. For more information, visit: <https://www.oajournals-toolkit.org/infrastructure/persistent-identifiers>



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## PRC vs Journals

Arguably, many journals already operate in a way that appears to align with a PRC publish-first model, as they often accept submissions that already exist as preprints, partially reflecting the principles of PRC workflows. However, this adaptation emerged gradually, as preprints initially seemed of little significance and later grew into a widespread practice that journals learned to coexist with. This coexistence allows journals to remain part of the evolving ecosystem but does not reflect a deliberate shift in their processes. In contrast, PRC intentionally reimagines the system, advocating for all research to be made publicly available first, followed by review and curation—marking a far more purposeful and systemic approach to openness and accessibility.

Journals could adapt in several ways to align more closely with this principle. They might choose to exclusively retrieve preprints for review, require authors to deposit their work on preprint servers before initiating the review process, or bypass preprint servers entirely by publishing content in an early form themselves, offering immediate access without relying on external platforms.

However, journals could also adapt in ways shaped more by profit-seeking motives than by the principles underlying the PRC movement. Commercial publishers optimize for profit, often redesigning their processes to maximize financial returns—a practice that should come as no surprise. This profit-driven approach was clearly evident with the adoption of article processing charges (APCs), where publishers turned the model into a lucrative revenue stream by incentivizing the publication of greater volumes of content and raising APCs to increase income. This move to APCs once, almost universally, seen as the road to sustainability for Open Access is now seen by many as having generated many more issues of equity within the scholarly environment [1]. PRC should likewise remain vigilant about the potential for unintended consequences.

With PRC, there is a risk that publish-first workflows could be co-opted by journals to prioritize profit over their original intent. As James Butcher highlighted in a recent *Journalology* [2] article (December 16, 2024), PRC could pave the way for journals to adopt some new revenue models. These might include “submission charges” or “deposit charges,” monetizing all submissions regardless of whether they are ultimately curated as the Version of Record (VOR). Such models would transform preprints into yet another revenue-generating step in the publishing process, placing additional financial burdens on researchers—especially if, over time, the perceived prestige of “being associated with a journal,” regardless of curatorial outcome, undermines the current free-to-submit preprint server model.

This monetization strategy highlights a potential risk of the PRC model being co-opted by commercial publishers to prioritize profit over the principles of openness and accessibility. By charging for submissions, even those that do not proceed to full curation or publication, journals could exploit the publish-first ethos of PRC for financial gain, further complicating the already high cost of academic publishing for researchers and causing even more inequities.

Could Butcher's projection represent the future of PRC for journals? Interestingly, James Butcher appears skeptical for now, not because of the revenue potential but primarily due to the current perception of PRC. He highlights the recent eLife case as a pivotal moment in the discussion around PRC and its potential adoption by journals. eLife was temporarily [3] put on hold from indexing in Web of Science as eLife's PRC workflow did not comply with their journal-based inclusion criteria. While this suspension was later partially resolved, it raised concerns about how future 'PRC-aligned' workflows might be received by traditional indexing systems.

Many journal staff, however, remain largely unaware of what PRC actually entails. This lack of understanding leads them to conflate PRC with eLife's specific model, further contributing to confusion. This misinterpretation of PRC as synonymous with eLife's practices highlights a broader need for clarity and education about PRC principles within the scholarly publishing ecosystem.

Some of the discomfort journals face with PRC stems from their adherence to the traditional concept of the "Version of Record" (VOR). Academia relies heavily on the VOR as a marker of credibility—a definitive "pole in the ground" that signifies an author's position at a particular moment in time. In the traditional journal world, the VOR also indicates that an article has undergone and 'passed' peer review - a quality indicator, implying curation and validation by experts. The very act of publishing an article as the VOR in a journal is perceived as bestowing a seal of authority, distinguishing the output as having met the rigorous standards of peer review. Conversely, if an article is not officially published, it is seen as having failed to "pass," a stark binary inherent in the traditional publishing paradigm.

However, alternative perspectives, such as those embraced by many PRC communities, challenge this notion. PRC advocates generally view research outputs as part of an evolving conversation, an iterative process where revisions are not mere amendments but steps toward ongoing improvement. This perspective stands in direct tension with the canonical nature of the VOR. By design, the VOR is static and final, a snapshot of completion. Iterative improvements, on the other hand, imply a continuum of change, making it difficult to reconcile such fluidity with the rigidity of a VOR.

This tension is often framed as a PRC versus journal debate, yet some journals are also redefining the traditional concept of a Version of Record (VOR). The forthcoming *Lifecycle Journal*, developed by the Center for Open Science, offers a nuanced perspective on the VOR. Rather than rejecting the concept outright, *Lifecycle Journal* allows authors to declare a VOR *should they wish to*, treating it as a 'state' within a continuous process rather than a definitive endpoint. Authors retain the ability to revise their work even after assigning a VOR, reflecting an understanding of research as an evolving conversation. This model positions the journal not as the arbiter of a canonical moment but as a facilitator of research evolution. These initiatives underscore a growing debate about the role of the VOR in scholarly publishing, demonstrating that even within traditional frameworks, there is room for innovation and reimagination.

On the other hand, if PRC gains broader popularity and publishers perceive it as a threat, they may actively work to undermine the ecosystem to protect their existing business models. In an era where trust in science and concerns about misinformation are paramount, publishers could leverage anxieties about the risks of sharing "non-peer-reviewed" material to cast doubt on the reliability and credibility of preprints. By emphasizing the potential for harm or misunderstanding associated with unverified findings—especially in sensitive fields like medicine or public health—they could undermine confidence in preprints. This narrative might find traction among policymakers, institutions, and the public, framing preprints as problematic rather than as a valuable part of the scholarly communication landscape. However, the effectiveness of this strategy could diminish if PRC communities gain traction and successfully provide the robust review mechanisms that address these concerns.

Another, somewhat more tangential, response from large publishers is their ongoing development and marketing of technical services that validate or provide 'trust metrics' for scholarly content. With increasing emphasis on research integrity and trustworthiness, publishers and technology providers are actively rolling out proprietary "integrity tools" designed to assess, authenticate, and verify the quality of research outputs. These tools often include features such as automated validation systems, trust metrics, and algorithms that flag potential issues in manuscripts [4].

By monetizing these services, publishers and vendors are creating new revenue streams, targeting stakeholders with the resources to pay for advanced validation technologies. However, this strategy risks marginalizing self-organizing researcher groups and grassroots PRC communities, which often lack the financial resources to access such tools. This could create a divide in the scholarly ecosystem, where access to validation and trust metrics becomes a function of financial capacity, further privileging well-funded entities.

Much of what these tools claim to do is certainly open to challenge. Their effectiveness, transparency, and biases are areas ripe for scrutiny, particularly as these systems often rely on opaque algorithms and unexamined assumptions about what constitutes "trust" or "integrity." However, since the tools are closed, their algorithms and methodologies cannot be independently assessed, making it difficult to evaluate their actual performance or fairness. This lack of transparency shifts the battlefield to the realm of marketing, where the contest for "mind share" will likely take place.

Independent benchmarking or validation of these tools' results could provide a more grounded basis for comparison, but such efforts require significant coordination and support. Without this, the closed nature of these tools and their marketing dominance risk overshadowing the potential contributions of open, community-driven initiatives in shaping the future of research integrity.

The increasing prevalence of proprietary integrity tools highlights the critical role of the open infrastructure movement. Open-source solutions are essential to ensure equitable access to these technologies, allowing all researchers to benefit from



advancements in validation and quality assurance. Moreover, open infrastructure initiatives could challenge the dominant narratives promoted by publishers, pushing for greater transparency, accountability, and fairness in how trust metrics and validation systems are designed and applied.

How journals respond to PRC will be interesting to watch, as it could signal shifts in the future of academic publishing. Those that adapt may find opportunities to reduce inefficiencies, better meet researchers' needs, and redefine their role in the ecosystem. Conversely, journals that stick to traditional practices risk losing relevance in a landscape that increasingly values speed, transparency, and collaboration. That said, it's also possible that nothing substantial will change, and PRC could turn out to be a flash in the pan. However, this last outcome should not be assumed as the most likely scenario. Movements like PRC, if they gather momentum, can apply significant pressure on entrenched legacy practices, potentially catalyzing meaningful transformation.

## Endnotes

1. **Gates OA Policy Deskside.** Bill and Melinda Gates Foundation Program Officer, Ashely Farley, comments on the inequities of APCs "Article processing charges can cost up to \$12,000 per article, and this can cause inequities globally where researchers might not have the availability of funding or the ability to pay such high costs in order to publish.". <https://youtu.be/cRnCDRW2EBM>
2. **Journalology:** *Journalology* is an independent publication founded by James Butcher, offering in-depth analysis, news, and commentary on the academic publishing ecosystem. The specific quote I'm referring to is in the Dec 16, 2024 edition: "The cynic in me suspects that some publishers would love to be able to monetise every submission, not just the ones that are accepted for publication as the version of record. That seems less likely to happen now that Scopus and Web of Science have issued their edicts." Visit: <https://www.journalology.com/>.
3. **Update on eLife's indexing status at Web of Science.**(2024). An interesting post outlining eLife's position. "Publication alone is a poor signal and measure of validity." <https://elifesciences.org/inside-elifelife/16afe6ec/update-on-elifelife-s-indexing-status-at-web-of-science>
4. **Trends in research integrity concerns and the evolving role of the publisher.** Sabina Alam (2024). "In an era of increasing research integrity concerns that evolve in form and scale, the role of the scholarly publisher in vetting, safeguarding and investigating content pre- and post-publication has been crystalizing into a core publisher skill set." <https://insights.uksg.org/articles/10.1629/uksg.663>



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## Unresolved Challenges in PRC

While the Publish-Review-Curate (PRC) model addresses some of the most pressing issues in traditional journals—most notably the time-to-market problem by prioritizing rapid dissemination—it leaves significant challenges unresolved, particularly in the areas of review and production.

Some have suggested that preprint review is quicker—or can be quicker—than traditional journal review processes [1]. However, these efficiencies may diminish if PRC maintains, as it generally does now, traditional review workflows (reviewer invitations, multiple rounds, author feedback etc), as scaling up could introduce challenges that slow the workflow as it has for journals. This underscores the need for thoughtful and innovative approaches to reimagine the review process itself.

Shifting peer review to occur after publication accelerates access to research but does not eliminate the bottlenecks inherent in traditional review processes. PRC workflows still depend on time-intensive and resource-heavy review models. A key question is whether every research output requires the same level of scrutiny. For some content, lightweight or selective review might suffice, reducing delays while maintaining quality. Complementary approaches, such as public annotations or open discussions, could also foster faster, iterative feedback while increasing transparency and engagement.

By exploring these innovations, PRC can ensure it not only scales effectively but also maintains the agility and accessibility that define its promise.

Production presents an even greater challenge. Integrating content into the scholarly record is a complex and technical process. Researchers often face substantial barriers, such as understanding JATS XML, navigating metadata systems like CrossRef or DataCite, or even breaking down citations into structured formats. These tasks, which may seem routine to publishing professionals, are daunting for researchers without specialized expertise.

Ironically, the reliance on PDFs exacerbates these issues. Preprint servers, while revolutionary in speeding up dissemination, have largely regressed to PDFs as the default format, setting the sector back in terms of accessibility and reusability. Converting unstructured PDFs into structured formats like HTML or XML—the so-called “hamburger-to-cow” problem [2]—is labor-intensive, costly, and inefficient. Transitioning to structured HTML earlier in the workflow would have transformative effects, enabling seamless conversions into formats like EPUB, PDF or XML while reducing typesetting costs and improving accessibility. HTML-first, single-source publishing systems present a compelling alternative to PDF and XML-driven workflows, simplifying engagement while maintaining expectations of document and data fidelity [3].

Another issue for PRC has not yet dealt with is: why are we still dealing exclusively with articles? Surely, there are other formats that could lead to more dynamic and useful ways of presenting research. What about other types of research objects such as data publications? Many experiments are already exploring this space, such as platforms like CurveNote and Stenci.la, which, amongst other things, render data-driven dynamic

charts. We need more of this, but it also comes with a plethora of problems yet to be solved. The portability of such dynamic content for review purposes remains a significant challenge—particularly problematic in decentralized review ecosystems.

Then, of course, there is the role of AI - a big topic in scholarly communications at this moment. While the Open Infrastructure movement includes AI tools, much like their proprietary counterparts, they sometimes overpromise on what AI can realistically achieve—often as a means to attract funding or attention. This issue is not unique to open-source tools; proprietary systems also suffer from this tendency to sell "magic." The general problem is that when a new technology emerges, it is, almost by definition, not well understood by the broader community. This lack of understanding creates a temptation for technologists to frame their tools as a kind of magic, even when the reality is more modest. Compounding this is the fact that people often like to buy into the promise of "magic" solutions rather than grappling with the complexities of the tools themselves.

Despite this, there are excellent open tools, such as OpenAlex and Semantic Scholar, which are already making strides in integrating AI into research workflows. These tools, however, need better integration into PRC systems, and more tools of this caliber are necessary to support the ongoing evolution of PRC practices effectively.

The technical infrastructure supporting PRC workflows adds another layer of complexity. Each PRC community has its own ideas about the data it needs, where it comes from, what happens to it, how it is represented, and where it ultimately ends up. These requirements are often arbitrary in the sense that they vary significantly across communities and domains, reflecting the diverse needs and priorities of each group. Many PRC workflows also rely on novel or experimental processes that push existing systems beyond their intended capabilities. Coordinating teams across these disparate workflows and creating shareable, publishable assets—such as reviews or annotations—often involves integrating with external systems in diverse formats. This level of internal data management, differing coordination models, and system interoperability demands a technical agility that many current systems, designed with publishers rather than researchers in mind, fail to provide.

Addressing these challenges requires making strategic choices about technological development. There are three main paths: building bespoke systems tailored to specific workflows, developing abstracted platforms capable of managing diverse processes, or leaving researchers to manage workflows using general-purpose tools like spreadsheets. The latter, though ubiquitous, is inefficient and prone to errors. Spreadsheets are a frequent cause of delays in many traditional journal workflows (still!), and their over-reliance risks replicating these inefficiencies in PRC workflows.

Bespoke systems, while offering a high level of fit for specific projects, are costly to develop and often replicate up to 90% of existing functionality, leading to unnecessary duplication of effort and expense. This issue is particularly prevalent in the journal sector, where many publishers independently build tools that replicate similar features,

shouldering the full burden of development themselves. It is essential to learn from these inefficiencies and avoid repeating them in PRC workflows. Flexible open infrastructure platforms, by contrast, offer greater adaptability but demand significant upfront investment and technical expertise to develop.

In my own experience working with various PRC groups, I've observed that while there is significant potential for shared features—such as notification systems, DOI management, invitations, versioning, tracking, and reporting—but each project also often requires systems to be configured and extended to meet its specific needs. This variability reflects the emergent nature of PRC as a field of practice.

For instance, some groups require each review to have its own DOI, with preferences split between using CrossRef or DataCite. Some favor batch-importing content from services like Semantic Scholar, while others rely exclusively on manual processes. Certain groups prefer inviting authors into the review process, while others insist on formal submissions. Collaborative review models appeal to some, whereas others prioritize isolated, independent reviews. Some groups seek author interaction, though the type of interaction varies—ranging from concurrent chat to threaded messaging, or even integrating the author directly into the review process itself. Even the features for managing team dynamics vary—some support flat team structures, while others cater to highly hierarchical setups.

There is also significant divergence in how groups handle updated preprints within ongoing review cycles - an interesting challenge in a decoupled ecosystem. Moreover, every PRC project I've worked with has unique requirements for the data needed for evaluation, how it is presented to reviewers, and what happens to the review once completed.

Further, as the PRC field matures, there will be an increasing need for experimentation, and the supporting technology must adapt accordingly. Technology must not only iterate alongside these experiments but also anticipate potential avenues for further innovation and exploration.

These diverse requirements underscore the need for configurable and extensible technical systems. Each of these variations represents a challenge for platform design, necessitating a lot of bespoke systems, or systems that can adapt to a wide range of practices while minimizing redundancies and inefficiencies.

ChatGPT

## Endnotes

1. **Recommendations for accelerating open preprint peer review to improve the culture of science.** Avissar-Whiting M, Belliard F, Bertozzi SM, Brand A, Brown K, Clément-Stoneham G, et al. (2024). This interesting conference summary summarizes some research and experiences of PRC advocates and practioners. <https://journals.plos.org/plosbiology/article?id=10.1371/journal.pbio.3002502#sec002>
2. **The "Hamburger-to-Cow" Problem:** Popularized by Peter Murray-Rust, this concept highlights the inefficiencies of converting unstructured PDFs back into structured data formats. The analogy emphasizes the unnecessary complexity of re-engineering content for reuse. For more, see: <https://council.science/blog/implementing-fair-data-principles/>
3. **Single-Source Publishing:** A streamlined approach that uses a single structured format, such as HTML, to produce multiple outputs like web content, PDFs, EPUBs, and XML. For an in-depth discussion, see my blog post (2023: <https://www.robotscooking.com/single-source-publishing/>)





3

FINAL THOUGHTS



11

From Process to Movement

Academic publishing faces persistent challenges: journals are slow, expensive, and often resistant to innovation. The emergence of preprints and Publish-Review-Curate (PRC) communities offers a promising solution to these longstanding problems. By enabling rapid dissemination, review, and fostering open collaboration, these approaches not only address immediate inefficiencies but also create opportunities for innovation that traditional journals struggle to match.

PRC represents more than just a reordering of traditional publishing workflows—it serves as the foundation of a movement to decentralize scholarly communication. Its true potential lies in fostering a decentralized ecosystem where the scholarly community collectively determines the value of research. This decentralization empowers new groups to emerge and innovate without needing permission, experimenting with novel approaches to review and curation. Some of these innovations will achieve widespread adoption, while others may remain valuable within specific niches. Whichever practices survive and thrive, by lowering barriers to participation and fostering a culture of experimentation, PRC has the potential to redefine how research is reviewed, curated, and shared—offering a more inclusive and adaptable alternative to traditional publishing.

Although preprint review is in its infancy, momentum is building rapidly, and we feel the potential benefits are already evident. Building on the growing enthusiasm within the community, the time is right to promote the growth of this practice so that scholarly publishing may become more constructive, equitable, and transparent. [1]

Looking ahead, several futures are possible for PRC. One possibility is that PRC and traditional journals continue to coexist in a hybrid ecosystem, operating alongside each other without significantly influencing one another's practices, as it is today. Alternatively, PRC could become dominant in fields that prioritize rapid dissemination and open collaboration, carving out a more prominent role in scholarly publishing. Another scenario involves PRC surpassing traditional journals entirely, reshaping the landscape into a decentralized, community-driven ecosystem. A further possibility is deeper collaboration between PRC projects and journals, moving beyond mere coexistence to develop integrated models that combine the strengths of both approaches.

Whatever the future entails, for PRC to grow from an emerging framework into a broader movement capable of driving lasting change, the scholarly community must take practical steps to build on the progress already being made. Here are a few of my thoughts on what could be done.

1. **A Stronger Name:** 'Publish-Review-Curate' (PRC) effectively conveys the process but lacks the kind of spark needed to capture broader attention. A well-chosen name, as seen in the rebranding of 'Free Software' to 'Open Source,' which in effect changed the name of the movement (though both now exist in parallel), could help solidify PRC's identity and expand its appeal (see the story here: <https://opensource.com/article/18/2/coining-term-open-source-software>)."
2. **Collaborative Leadership:** The community would benefit from more visible, coordinated leadership to articulate its vision, share practices, and facilitate collaboration across PRC initiatives.
3. **Clearer Messaging:** Current discussions often focus narrowly on PRC's mechanics rather than its transformative potential. Compelling narratives about how PRC empowers researchers and fosters innovation could inspire broader engagement.
4. **Supporting New Initiatives:** Established communities already share tools and mentor others, but better coordination could amplify these efforts and encourage new PRC groups to form.
5. **Encouraging Collaboration:** Regular gatherings, both virtual and in-person, would allow PRC projects, preprint servers, open infrastructure providers, and other stakeholders to share experiences and learn from one another.
6. **Collaboration between PRC projects and Preprint Servers:** Closer collaboration between preprint servers and PRC communities is essential for fostering network effects and maximizing the system's overall impact.
7. **Pushing Innovation:** PRC implementations still often mirror traditional publishing practices. Experimenting with new review formats, curation approaches, and contribution recognition systems could unlock transformative potential.
8. **Sophisticated Open Infrastructure:** Building better open infrastructure that simplifies complex processes for researchers is essential. These systems must allow researchers to easily contribute directly to the scholarly record.

Above all, PRC must preserve its decentralized nature. This isn't just a design choice—it is the foundation of its ability to drive meaningful change. Traditional publishing relies on rigid hierarchies, but PRC thrives by allowing communities to experiment and learn from one another. Coordination should enhance this flexibility, not constrain it.

Finally, the success of PRC also depends on embracing the user-driven model where the individuals designing the solutions are the same as those experiencing the challenges. This alignment ensures that tools, workflows, and innovations are deeply practical, directly addressing the needs of researchers. By maintaining this grassroots, "itch-to-scratch" approach—akin to open-source development—PRC fosters solutions that are

not only effective but also adaptable to the realities of research practice. This model prioritizes relevance and usability, empowering researchers to remain active architects of the systems they rely on and ensuring that innovation stays connected to the evolving demands of scholarly communication.

These steps highlight areas where the PRC community can build on its existing strengths to drive further progress. By rethinking naming, leadership, and infrastructure, PRC can continue shaping the future of scholarly communication into a more open, collaborative, and impactful ecosystem.

## Endnotes

1. **Recommendations for accelerating open preprint peer review to improve the culture of science** — Michele Avissar-Whiting, Frédérique Belliard, Stefano M. Bertozzi, et al. (2024). Retrieved from <https://journals.plos.org/plosbiology/article?id=10.1371/journal.pbio.3002502>

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EPILOGUE





12

## How This Book Was Written

This book reflects how I see the topic of PRC at this moment in time. It is a collection of ideas, insights, and arguments that I have been considering for a while, brought together with the assistance of an controversial (in publishing) yet increasingly relevant tool: ChatGPT. I want to declare this upfront because I know that many in academia remain skeptical about such approaches. However, I see this as an opportunity to reframe some persistent myths about authorship, creativity, and collaboration.

For centuries, the conflation of "having ideas" and "writing" has been central to the mythos of publishing. If you produced a good book, it was assumed you were a good thinker; if you were a good thinker, it followed that you could produce a good book. Jack Stillinger's work on the rise of the author-genius [1] and Martha Woodmansee's [2] exploration of this same issue reveal how deeply rooted and flawed this perception is. The Romantic ideal of the solitary, inspired author has shaped how we think about books, essays, articles, and all forms of published outputs, equating the act of writing with the act of creation. Yet, publishing has always been collaborative. Few works are written entirely by one person, despite claims to the contrary or the lack of credit given to others involved. Whether through editors shaping the text, peers providing feedback, or conversations sparking ideas, all published texts, in my view, are fundamentally collaborative efforts.

AI helped me greatly to bridge the gap between my ideas and their articulation. It allowed me to write down my thoughts faster and with greater clarity than I could have achieved on my own. The ideas in this book are entirely mine, and I stand by them. What AI did was help me translate them into clearer, more structured text, making them easier to understand.

In this sense, I see myself as the curator of this book rather than solely its author. The thoughts, arguments, and worldview presented here are mine, shaped by my experiences and insights. AI was a tool—an accelerant to transform these ideas into a coherent narrative. Far from diminishing the creative process, it enhanced it, allowing me to focus on the substance of what I wanted to say rather than getting bogged down in the mechanics of writing.

To those who remain critical of such approaches, I would say this: AI was a tool—a delivery mechanism that enabled me to share my ideas with you as quickly and clearly as possible. And this, after all, has always been the fundamental function of publishing itself: to assist in conveying clear ideas from one mind to many as timely and effectively as possible. If you take issue with my approach, so be it. But I would urge you to also reconsider the role, practices, and assumptions of publishing itself, along with the continuing myths surrounding authorship.

1. Multiple Authorship and the Myth of Solitary Genius: <https://academic.oup.com/book/48792>

2. On the Author Effect: Recovering Collectivity: <https://cyber.harvard.edu/IPCoop/92wood.html>



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## Projects Mentioned in this Book

## arXiv

A preprint repository that has revolutionized how research is disseminated in fields like physics, mathematics, and computer science, enabling rapid sharing of research results.

URL: <https://arxiv.org>

## Bat-Com

A PRC initiative focused on zoonotic pathogens, reviewing both preprints and published literature.

URL: forthcoming

## BioPhysics Colab

A collaborative PRC project that selects preprints for review and invites authors to participate, emphasizing interaction between researchers and reviewers.

URL: <https://www.sciencecolab.org/biophysics-colab>

## bioRxiv

A leading preprint repository for biology research, bioRxiv pioneered the practice of posting life sciences preprints, enabling researchers to share their work rapidly.

URL: <https://www.biorxiv.org>

## COAR Notify

An open protocol developed by the Confederation of Open Access Repositories (COAR) to facilitate interoperable workflows between repositories, preprint servers, and peer review services, supporting decentralized and transparent scholarly communication.

URL: <https://coar-notify.net/>

## Curvenote

A tool for creating, collaborating, and publishing interactive scientific content.

URL: <https://curvenote.com>

## eLife

A nonprofit journal and platform reimagining the peer review process.

URL: <https://elifesciences.org>

## F1000 Research

Integrates immediate publishing with open peer review and post-publication reviews.

URL: <https://f1000research.com>

## Hypothesis

Annotation tool used in various preprint servers and PRC projects.

URL: <https://web.hypothes.is/>

## LifeCycle Journal

A forthcoming initiative by the Center for Open Science that redefines the concept of a "version of record" (VOR) and embraces a publish-before-review model.

URL: <https://www.cos.io/lifecyclejournal>

## medRxiv

A preprint repository dedicated to health sciences research, enabling rapid dissemination of findings in medicine and public health.

URL: <https://www.medrxiv.org>

## MetaROR

A transformative PRC project focusing on decentralization and transparency in scholarly publishing, aiming to create equitable systems for evaluating research.

URL: <https://metaror.org>

## NCRC (Novel Coronavirus Research Compendium)

A PRC project that emphasizes collaborative workflows for reviewing and curating preprints related to COVID-19 research.

URL: <https://ncrc.jhsph.edu/>

## OpenAlex

An open dataset and API that indexes scholarly content, including papers, authors, institutions, and citations.

URL: <https://openalex.org>

## Peer Community In (PCI)

Organizes peer reviews around disciplinary groups and offers journal-independent recommendations for preprints, creating an alternative evaluation mechanism.

URL: <https://peercommunityin.org>

## PREreview

Promotes collaborative and constructive feedback on preprints, with a focus on supporting early-career researchers and enhancing inclusivity in peer review.

URL: <https://prereview.org>

## Rapid Reviews: COVID-19

A PRC initiative specifically targeting rapid review and dissemination of COVID-19-related research, addressing the urgent need for timely evaluations.

URL: <https://rrid.mitpress.mit.edu/>

## Review Commons

Provides journal-independent peer reviews that authors can use to submit to multiple outlets, streamlining the submission and review process.

URL: <https://reviewcommons.org>

## Society

A platform for curating and reviewing preprints, offering tools for researchers to organize and evaluate research outputs collaboratively.

URL: <https://society.org>

## Semantic Scholar

An AI-powered research tool that helps researchers discover relevant papers and track influential research trends. Semantic Scholar is often used in PRC workflows for batch-importing metadata and facilitating advanced search capabilities.

URL: <https://www.semanticscholar.org>

## Stencila

An open-source platform designed to create dynamic and reproducible scientific documents, enabling researchers to integrate data, code, and narratives seamlessly



within PRC workflows.

URL: <https://stencila.io>

## The Unjournal

Challenges traditional journal models by emphasizing transparency and rejecting hierarchical gatekeeping in scholarly communication.

URL: <https://www.unjournal.org/>